

10/537940
Rec'd PTO 07 JUN 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/052837 A3

(51) International Patent Classification⁷: C07C 229/52, 237/42, 237/32, 237/34, 237/40, C07D 295/18, 277/66, 277/46, 313/12, A61K 7/44

(74) Common Representative: CIBA SPECIALTY CHEMICALS HOLDING INC.; Patent Department, Klybeckstrasse 141, CH-4057 Basel (CH).

(21) International Application Number:
PCT/EP2003/050937

(81) Designated States (national): AB, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 3 December 2003 (03.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
02406093.1 12 December 2002 (12.12.2002) EP
2003 1113/03 25 June 2003 (25.06.2003) CH
03102297.3 25 July 2003 (25.07.2003) EP

(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): CIBA SPECIALTY CHEMICALS HOLDING INC. [CH/CH]; Klybeckstrasse 141, CH-4057 Basel (CH).

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

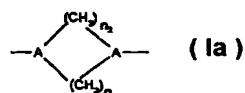
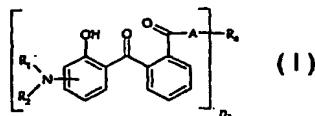
(72) Inventors; and

(75) Inventors/Applicants (for US only): HAASE, Jürg [CH/CH]; Habermarkweg 45, CH-4126 Bettingen (CH). EHLIS, Thomas [DE/DE]; Harriet-Straub-Strasse 23, 79100 Freiburg (DE). BORSOS, Elek [CH/CH]; Muttenzerstrasse 137, CH-4127 Birsfelden (CH). MÜLLER, Stefan [DE/DE]; Barrystrasse 1, 79618 Rheinfelden (DE).

(88) Date of publication of the international search report:
10 September 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AMINO SUBSTITUTED HYDROXYPHENYL BENZOPHENONE DERIVATIVES



WO 2004/052837 A3

(57) Abstract: Described are amino substituted hydroxyphenyl benzophenone derivatives of formula (I), wherein R₁ and R₂ independently from each other are; C₁-C₂₀alkyl; C₂-C₂₀alkenyl; C₃-C₁₀cycloalkyl; C₃-C₁₀cycloalkenyl; or R₁, and R₂ together with the linking nitrogen atom form a 5- or 6-membered heterocyclic ring; n₁ is a number from 1 to 4; when n₁=1, R₃ is a saturated or unsaturated heterocyclic radical; hydroxy-C₁-C₅alkyl; cyclohexyl optionally substituted with one or more C₁-C₅alkyl; phenyl optionally substituted with a heterocyclic radical, aminocarbonyl or C₁-C₅alkylcarboxy; wenn n₁ is 2, R₃ is an alkylene-, cycloalkylene- or alkenylene radical which is optionally substituted by a carbonyl- or carboxy group; o R₃ together with A forms a bivalent radical of the formula (Ia), wherein n₂ is a number from 1 to 3; when n₁ is 3, R₃ is an alkanetriyl radical; wenn n₁ is 4, R₃ is an alkanetetrayl radical; A is -O-; or -N(R₅)-; and R₅ is hydrogen; C₁-C₅alkyl; or hydroxy-C₁-C₅alkyl. The compounds are useful as UV filters in sunscreen applications.

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/50937

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07C229/52 C07C237/42 C07C237/32 C07C237/34 C07C237/40
C07D295/18 C07D277/66 C07D277/46 C07D313/12 A61K7/44

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07C C07D A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 046 391 A (BASF) 25 October 2000 (2000-10-25) the whole document -----	1-26,29

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

13 April 2004

Date of mailing of the international search report

15.07.2004

Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentstaan 2
NL - 2280 HV Rijswijk
Tel: (+31-70) 340-2040, Tx. 31 651 epo nl
Fax: (+31-70) 340-3016

Authorized officer

Zervas, B

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 03/50937

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-26,29

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-26,29

Compounds according to the general formula (1) and their preparation. Use of the compounds according to the general formula (1) or (1') as UV-absorbers in cosmetic preparations

2. claims: 27,28

Compounds according to the general formula (6b') and their use in the preparation of organic UV-absorbers

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/50937

Patent document cited in search report	Publication date		Patent family member(s)		Publication date
EP 1046391	A 25-10-2000	DE AU AU CN EP JP US	19917906 A1 773111 B2 2886900 A 1273088 A 1046391 A2 2000319628 A 6409995 B1		26-10-2000 20-05-2004 26-10-2000 15-11-2000 25-10-2000 21-11-2000 25-06-2002